UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,639	09/28/2000	Gary Dan Dotson	00AB154	7884

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Allen-Bradley Company Inc
Attention: John J Horn
Patent Dept/704P Floor 8 T-29
1201 South Second Street
Milwaukee, WI 53204

EXAMINER
WANG, JIN CHENG

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 02/27/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2004*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 22-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, and 22-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendments filed on 02/18/2004 have been entered. Claims 1, 22 and 28 have been

amended. Claims 15-21 have been canceled. Claims 1-14 and 22-29 are pending in the

application.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-14, and 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tjandrasuwita U.S. Patent No. 6,198,469 (hereinafter Tjandrasuwita) in view of Reddy et al.

U.S. Patent No. 6,215,459 (Reddy).

3.   Claim 1:

(a) Tjandrasuwita teaches a raster engine (flat panel interface 113 of figure 2) for

interfacing a frame buffer in a computer system (figure 1) to a plurality of disparate display types

over a single interface (e.g., column 4, lines 52-61), comprising:

At least one control register programmable via the computer system to select a display

mode (e.g., column 5, lines 58-65, e.g., the display mode can be selected at any given time; see

figure 2, and column 6, lines 1-20);

A programmable grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) to generate grayscale formatted data (e.g., column 3, lines 60-67; column 8, lines 28-35) for a plurality of disparate display types and formats (e.g., Dual Panel Dual Scan Super Twisted Nematic LCD Panels and single STN LCD panels; column 11, lines 15-51) from pixel data in the frame buffer (e.g., column 4, lines 50-67; column 5, lines 1-47), wherein the grayscale generator generates grayscale data according to the selected display mode (e.g., column 5, lines 58-65, the display mode can be selected at any given time; see also figure 2, and column 6, lines 1-20, to generate gray scale shading using time or frame modulation technique and the different gray shades can be generated by turning on and off the pixel; see for example, column 6, lines 48-60); and

A logic device (e.g., multiplexor 208; SEL2 which may originate from a control register that is programmed by the CPU as indicated by the user) adapted to select appropriate pixel data from the grayscale generator (e.g., figures 2-4) in accordance with a selected display mode (see the abstract of the reference), and to provide the selected pixel data to a single output (e.g., figure 2, and column 6, lines 2-20).

(b)   However, Tjandrasuwita does not explicitly disclose the claimed limitation that "wherein the single output can provide data to both CRTs and LCDs."

(c)   Reddy teaches the claimed limitation that "the single output can provide data to both CRTs and LCDs" (e.g., Reddy Figures 1, 2, 7, column 2-5).

(d)   It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the single output of Reddy from the Tjandrasuwita's device because such a construction would have provided a means driving displays of different

types from a single output (Reddy Figures 1 and 2; column 1-5). Moreover, Reddy further

discloses a grayscale color lookup and a logic device 157 and 257 and attribute controller in the

video controller to create image signals for the display devices and Tjandrasuwita teaches

outputs from the display controller can be displayed in CRTs and LCDs (Tjandrasuwita Figure

1). Tjandrasuwita could have incorporated the video controller of Reddy to be attached to an

output from Tjandrasuwita's integrated processing circuit 101 to provide a single output for the

LCDs and CRTs.

(e)   Such modification would have been required for portable computers or

multimedia presentation wherein the same image is to be displayed on both the LCD and CRT

displays (Reddy column 3).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional

claimed limitation of a grayscale look up table control register programmable by the computer

system. However, the Tjandrasuwita reference further discloses the claimed limitation of a

grayscale look up table control register programmable by the computer system (i.e., the dithering

engine 204 of figure 2, and the mapping scheme may be designed to be programmable as well,

column 7, lines 60-67).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 2 except additional

claimed limitation of the grayscale look up table comprising a three dimensional matrix having a

frame dimension (column 11, lines 52-67, e.g., FPFC[3:0]), a vertical dimension (FPVC[3:0]), a

horizontal dimension (FPHC[3:0]), and a plurality of data entries associated with each combination of frame, vertical, and horizontal dimensions, and wherein the data entries comprise a plurality of matrix position enable bits adapted to indicate whether a pixel in the display is energized (column 9, lines 43-62).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 3 except additional claimed limitation of the grayscale generator further comprising a frame counter, a vertical counter, and a horizontal counter, and wherein the grayscale look up table data entries define dithering operation for a pixel value according to the frame counter, the vertical counter, and the horizontal counter. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) further comprising a frame counter, a vertical counter, and a horizontal counter (column 2, lines 47-62), and wherein the grayscale look up table data entries (Table 1 of column 7) define dithering operation for a pixel value according to the frame counter, the vertical counter, and the horizontal counter (column 2, lines 47-62).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of the frame dimension comprising one of 3 and 4, wherein the vertical dimension comprises one of 3 and 4, and wherein the horizontal dimension comprises one of 3 and 4. However, the Tjandrasuwita reference further discloses the claimed limitation of the frame dimension (FPFC[3:0], see also column 9, line 64), wherein the vertical dimension

comprises one of 3 and 4 (FPVC[3:0], column 9, line 57), wherein the horizontal dimension

comprises one of 3 and 4 (FPHC[3:0], column 9, line 58).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 5 except additional

claimed limitation of the grayscale generator adapted to translate 3 bits of pixel data for a pixel

in the display to generate grayscale formatted data for the pixel to provide 8 shades of gray

according to the selected display mode and the grayscale lookup table data entries. However, the

Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g.,

figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) adapted to

translate 3 bits of pixel data for a pixel in the display to generate grayscale formatted data for the

pixel to provide 8 shades of gray according to the selected display mode (column 8, lines 3-18)

and the grayscale lookup table data entries (Table 1 of column 7). It is noted that in the two-to-

one mapping of the mapping of 16 possible gray-level inputs to 8 gray-levels, wherein the 4 bits

of pixel data can be translated into 3 bits (Table 1 of column 7).

Claims 7-8:

Claims 7-8 is a rephrasing of claims 5-6 in a method form. The claim is rejected for the

same reason as set forth in claims 5-6.

Claim 9:

Claim 9 is a rephrasing of claim 4 in a method form. The claim is rejected for the same

reason as set forth in claim 4.

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the grayscale generator programmable by a user via an application program in the computer system. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) programmable by a user via an application program in the computer system, e.g., the apparatus generates gray scale shading data in response to input color data that is programmable (see the abstract of the reference and column 4, lines 1-61 of the specification).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the application program being a video driver. However, the Tjandrasuwita reference further discloses the claimed limitation of the application program being a video driver (column 4, lines 9-61). The Office interprets the integrated processor circuit 101 as a video driver.

Claim 12:

Claim 12 is a rephrasing of claim 10 in a method form. The claim is rejected for the same reason as set forth in claim 10.

Claim 13:

The claim 13 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the display type. However, the Tjandrasuwita reference further discloses the claimed limitation of the display type (column 4, lines 52-61).

Claim 14:

Claim 14 is a rephrasing of claim 13 in a method form. The claim is rejected for the same reason as set forth in claim 13.

4.   Claim 22:

(a) The Tjandrasuwita reference has taught a raster engine (i.e., the flat panel interface 113 of figure 2) for interfacing a frame buffer in a computer system to one of a plurality of disparate display types (e.g., column 4, lines 52-61), comprising:

Means for selecting a display mode (e.g., the mode selecting circuit 403, see also column 5, lines 58-65);

Means for obtaining pixel data from the frame buffer (e.g., figure 1) and programmable (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, see also column 8, lines 3-67) via the computer system to generate grayscale formatted data for a plurality of disparate display types and formats including the selected display mode (e.g., Dual Panel Dual Scan Super Twisted Nematic LCD Panels and single STN LCD panels; column 11, lines 15-51; see also column 5, lines 58-65, the display mode can be selected at any given time; see also figure 2, and column 6, lines 1-20, to generate gray scale shading using time or frame modulation technique and the different gray shades can be generated by turning on and off the pixel; see for example, column 6, lines 48-60); and

A parallel output means (e.g., multiplexor 208 having a parallel output) for selecting appropriate pixel data from the means for obtaining pixel data for the selected display mode (e.g., figures 2-4), and for providing the selected pixel data at a single parallel output according to the selected display mode (e.g., figure 2, and column 6, lines 2-20).

(b)   However, Tjandrasuwita does not explicitly disclose the claimed limitation that "wherein the single output can provide data to both CRTs and LCDs."

(c)   Reddy teaches the claimed limitation that "the single output can provide data to both CRTs and LCDs" (e.g., Reddy Figures 1, 2, 7, column 2-5).

(d)   It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the single output of Reddy from the Tjandrasuwita's device because such a construction would have provided a means driving displays of different types from a single output (Reddy Figures 1 and 2; column 1-5). Moreover, Reddy further discloses a grayscale color lookup and a logic device 157 and 257 and attribute controller in the video controller to create image signals for the display devices and Tjandrasuwita teaches outputs from the display controller can be displayed in CRTs and LCDs (Tjandrasuwita Figure 1). Tjandrasuwita could have incorporated the video controller of Reddy to be attached to an output from Tjandrasuwita's integrated processing circuit 101 to provide a single output for the LCDs and CRTs.

(e)   Such modification would have been required for portable computers or multimedia presentation wherein the same image is to be displayed on both the LCD and CRT displays (Reddy column 3).

Claim 23-25:

The claim limitation as recited in each of the claims 23-25 encompasses the same scope of invention as that of the claims 3 and 4 in except additional claim limitation of "the grayscale look up table control register". However, Tjandrasuwita further discloses the claim limitation of

a grayscale look up table control register programmable by a computer system (e.g., the dithering

engine 204 and the mapping scheme of column 7 may be designed to be programmable as well,

and see also column 8, lines 3-67).

Claim 26:

The claim limitation as recited in the claim 26 encompasses the same scope of invention

as that of claim 6. The claim is rejected for the same reason as set forth respectively in claim 6.

Claim 27:

The claim limitation as recited in the claim 27 encompasses the same scope of invention

as that of claim 5. The claim is rejected for the same reason as set forth respectively in claim 5.

Claim 28:

The claim limitation as recited in the claim 28 encompasses the same scope of invention

as that of claim 1 except additional claim limitation of "the logic device comprising two or more

of a pixel shifting logic system, a YcrCb encoder, and a DAC". However, Tjandrasuwita further

discloses the claim limitation of the logic device comprising two or more of a pixel shifting logic

system, a YcrCb encoder, and a DAC (e.g., block 208 of Figure 2).

Claim 29:

The claim limitation as recited in the claim 29 encompasses the same scope of invention

as that of claim 22 except additional claim limitation of "the output device comprising two or

more of a pixel shifting logic system, a YcrCb encoder, and a DAC". However, Tjandrasuwita

further discloses the claim limitation of the output device comprising two or more of a pixel

shifting logic system, a YcrCb encoder, and a DAC (e.g., block 208 of Figure 2).

Remarks

9.   Applicant's arguments, filed 02/18/2004, paper number 14, have been fully considered but they are not deemed to be persuasive.

10.   Applicant argues in essence with respect to claim 30 and similar claims that:

"Therefore, Tjandrasuwita does not anticipate claims 1 and 22 at least because

Tjandrasuwita does not disclose providing selected pixel data at a single output, wherein

the output can provide signals to both CRTs and LCDs, as recited by the claims.

Furthermore, claims 1 and 22 are not rendered obvious by Tjandrasuwita at least because

Tjandrasuwita is not concerned with providing universal connectivity, but rather teaches

a frame rate modulation technique for passive matrix LCDs."

This is not found persuasive because Reddy teaches a single output can provide data to

both CRTs and LCDs (e.g., Reddy Figures 1, 2, 7, column 2-5). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to have provided the single

output of Reddy from the Tjandrasuwita's device because such a construction would have

provided a means driving displays of different types from a single output (Reddy Figures 1 and

2; column 1-5). Moreover, Reddy further discloses a grayscale color lookup and a logic device

157 and 257 and attribute controller in the video controller to create image signals for the display

devices and Tjandrasuwita teaches outputs from the display controller can be displayed in CRTs

and LCDs (Tjandrasuwita Figure 1). Tjandrasuwita could have incorporated the video controller

of Reddy to be attached to an output from Tjandrasuwita's integrated processing circuit 101 to

provide a single output for the LCDs and CRTs. Such modification would have been required

for portable computers or multimedia presentation wherein the same image is to be displayed on

both the LCD and CRT displays (Reddy column 3).

In summary, Tjandrasuwita/Reddy fulfills the claim 1 and 22 as currently drafted.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213.

The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 308-6606 for regular

communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw
February 23, 2004

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600